

WHAT IS CLAIMED IS:

1. A composition for removing a biofilm from a surface, which comprises an effective dislodging amount of a detergent and an effective dislodging amount of an acid or a salt of an acid, said salt being capable of displacing
5 divalent cations present in the structure of said biofilm, with the proviso that said composition is neither a mixture achieving an aqueous final concentration of SDS 1 % - 2 % and EDTA 1%, of SDS 1% - 2% and mandelic and lactic acids, each at an individual concentration of 1% or in a combined concentration of 2%, of SDS 0.25%, sodium benzoate 2% and
10 sodium salicylate 0.2%, nor a mixture of 0.1 - 0.3% SDS or SDDD, 0.1 - 0.3% SCS or SLS, 0.1% zinc sulfate, acetate, nitrate or gluconate salts and 0.1 - 0.3% HEEDTA, EDTA or DTPA, all percentages representing weight per volume concentrations.
2. A composition as defined in claim 1, further comprising a bactericidal
15 amount of a bactericide.
3. A composition as defined in claim 1, wherein said detergent is SDS, which achieves, once reconstituted in an aqueous solution, a concentration of at least about 0.1 % or any detergent having a biofilm dislodging potency substantially equivalent thereto.
- 20 4. A composition as defined in claim 3, wherein said equivalent detergent is CPC or CPB at a concentration of at least about 0.5%.
5. A composition as defined in claim 2, wherein said detergent is SDS, which achieves, once reconstituted in an aqueous solution, a concentration of at least about 0.1 % or any detergent having a biofilm dislodging potency substantially equivalent thereto.
- 25 6. A composition as defined in claim 5, wherein said equivalent detergent is CPC or CPB at a concentration of at least about 0.5%.
7. A composition as defined in claim 1, wherein said acid is mandelic acid which achieves, once reconstituted in an aqueous solution, a
30 concentration of at least about 0.1 % or any acid having a biofilm dislodging potency substantially equivalent thereto at a suitable working pH value.
8. A composition as defined in claim 2, wherein said acid is mandelic acid which achieves, once reconstituted in an aqueous solution, a concentration of at least about 0.1 % or any acid having a biofilm dislodging
35 potency substantially equivalent thereto at a suitable working pH value.

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9. A composition as defined in claim 1, wherein said salt or acid is an EDTA salt or acid which achieves, once reconstituted in an aqueous solution, a concentration of at least about 0.25 % or any salt or acid having a biofilm dislodging potency substantially equivalent thereto at a suitable working pH 5 value.

10. A composition as defined in claim 2, wherein said salt or acid is an EDTA salt or acid which achieves, once reconstituted in an aqueous solution, a concentration of at least about 0.25 % or any salt or acid having a biofilm dislodging potency substantially equivalent thereto at a suitable working pH 10 value.

11. A composition as defined in claim 1, wherein said salt or acid is sodium mandelate or mandelic acid which achieves, once reconstituted in an aqueous solution, a concentration range of at least about 0.1 % at a working pH value or any salt having a biofilm dislodging potency substantially 15 equivalent thereto.

12. A composition as defined in claim 2, wherein said salt or acid is sodium mandelate or mandelic acid which achieves, once reconstituted in an aqueous solution, a concentration range of at least about 0.1 % at a working pH value or any salt having a biofilm dislodging potency substantially 20 equivalent thereto.

13. A composition as defined in claim 1, wherein said acid is one or more of mandelic, 2-ketoglutaric, acetic, iminodiacetic, mucic, glycolic, fumaric, lactic, aspartic, phosphoric, pyruvic, chloroacetic, oxalic, citric, oxamic, malic, dichloroacetic, phenylacetic, benzylic, maleic, mandelic, succinic, 25 chloromandelic, glutamic, nitrilotriacetic, boric, adipic, formic, glucuronic, salicylic, benzoic, benzoyl formic, phthalic, ketopimelic acids, alanine, serine, tryptophane, tyrosine, bicine, tricine and glycine.

14. A composition as defined in claim 2, wherein said acid is one or more 30 of mandelic, 2-ketoglutaric, acetic, iminodiacetic, mucic, glycolic, fumaric, lactic, aspartic, phosphoric, pyruvic, chloroacetic, oxalic, citric, oxamic, malic, dichloroacetic, phenylacetic, benzylic, maleic, mandelic, succinic, chloromandelic, glutamic, nitrilotriacetic, boric, adipic, formic, glucuronic, salicylic, benzoic, benzoyl formic, phthalic, ketopimelic acids, alanine, serine, tryptophane, tyrosine, bicine, tricine and glycine.

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15. A composition as defined in claim 2, wherein said bactericide is hydrogen peroxide or any bactericide having a bactericidal potency and host spectrum substantially equivalent thereto.

16. A composition as defined in claim 15, wherein said equivalent bactericide is mandelic acid, phenol, sodium hypochlorite, CPC or CPB.

5 17. A composition as defined in claim 16, wherein mandelic acid or salt, phenol, sodium hypochlorite, CPC or CPB achieves, once reconstituted in an aqueous solution, a concentration of at least 0.1%, 0.1%, 0.5%, 0.1% and 0.1 %, respectively.

10 18. A composition as defined in claim 1, which further comprises a biofilm dislodging enhancer agent.

19. A composition as defined in claim 2, which further comprises a biofilm dislodging enhancer agent.

15 20. A composition as defined in claim 18, wherein said enhancer agent is a calcium chelator.

21. A composition as defined in claim 19, wherein said enhancer agent is a calcium chelator.

20 22. A composition as defined in claim 20, wherein said calcium chelator is EDTA in an acid or salt form which achieves, once reconstituted in an aqueous solution, a concentration of at least about 0.25 % or any calcium chelator having a chelating potency substantially equivalent thereto.

23. A composition as defined in claim 21, wherein said calcium chelator is EDTA in an acid or salt form which achieves, once reconstituted in an aqueous solution, a concentration of at least about 0.25 % or any calcium chelator having a chelating potency substantially equivalent thereto.

25 24. A composition as defined in claim 18 wherein said enhancer agent is a chaotropic agent.

25. A composition as defined in claim 19 wherein said enhancer agent is a chaotropic agent.

30 26. A composition as defined in claim 24, wherein said chaotropic agent is SDS which achieves, once reconstituted in an aqueous solution, a concentration of at least about 0.1 % or any chaotropic agent having a chaotropic potency substantially equivalent thereto.

27. A composition as defined in claim 25, wherein said chaotropic agent is SDS which achieves, once reconstituted in an aqueous solution, a

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concentration of at least about 0.1 % or any chaotropic agent having a chaotropic potency substantially equivalent thereto.

28. A composition for removing a biofilm from a surface, which comprises an effective dislodging amount of a detergent and an effective dislodging 5 amount of an acid or a salt of an acid; said detergent being selected from sodium dodecyl sulfate, sodium n-decyl diphenylether disulfonate, sodium cocoyl sarcosinate, polyoxyethylene sorbitan monolaureate, cetylpyridinium bromide and cetylpyridinium chloride; said acid being selected from the group consisting of mandelic, 2-ketoglutaric, acetic, iminodiacetic, mucic, glycolic, 10 fumaric, lactic, aspartic, phosphoric, pyruvic, chloroacetic, oxalic, citric, oxamic, malic, dichloroacetic, phenylacetic, benzylic, maleic, succinic, chloromandelic, glutamic, nitrilotriacetic, boric, adipic, formic, glucuronic, 15 salicylic, benzoic, benzoyl formic, phthalic, ketopimelic, ethylenediamine tetraacetic, N-(hydroxyethyl) ethylenediamine triacetic acids, alanine, serine, tryptophane, tyrosine, bicine, tricine and glycine, with the proviso that said composition is neither a mixture achieving a final concentration of SDS 1 % - 2 % and EDTA 1%, of SDS 1% - 2% and mandelic and lactic acids, each at an individual concentration of 1% or in a combined concentration of 2%, of 20 SDS 0.25%, sodium benzoate 2% and sodium salicylate 0.2%, nor a mixture of 0.1 - 0.3% SDS or SDDD, 0.1 - 0.3% SCS or SLS, 0.1% zinc sulfate, acetate, nitrate or gluconate salts and 0.1 - 0.3% HEEDTA, EDTA or DTPA, all percentages representing final weight per volume concentrations.

29. A composition as defined in claim 28, further comprising a bactericide selected from mandelic acid, phenol, sodium hypochlorite, hydrogen 25 peroxide, CPC and CPB.

30. A composition for removing a biofilm from a surface, which achieves, once reconstituted in an aqueous solution, a concentration of at least about 0.1% but less than 1% SDS, about 0.1% - 1% acid or a salt of an acid and at least about 0.25% but less than 1% EDTA, said acid being selected one 30 or more of 2-ketoglutaric, mandelic, iminodiacetic, mucic, glycolic, fumaric, L-aspartic, phosphoric, pyruvic, chloroacetic acids and DL-alanine.

31. A composition as defined in claim 30, further comprising a bactericidal amount of a bactericide.

32. A composition for removing a biofilm from a surface, which achieves, 35 once reconstituted in an aqueous solution, a concentration of at least about

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0.1% SDS, at least about 0.1% acid or a salt of an acid, and at least about 0.25% EDTA, said acid being of 2-ketoglutaric, iminodiacetic, mucic, glycolic, fumaric, aspartic, phosphoric, pyruvic, chloroacetic acids and alanine.

33. A composition as defined in claim 32, further comprising a bactericidal 5 amount of a bactericide.

34. A composition as defined in claim 31, wherein said bactericide is hydrogen peroxide at a final concentration of about 5%, or phenol at concentration of at least about 0.1%, or sodium hypochlorite at concentration of at least about 0.5%, or CPC or CPB at concentration of at least about 10 0.5%.

35. A composition as defined in claim 33, wherein said bactericide is hydrogen peroxide at a final concentration of about 5%, or phenol at concentration of at least about 0.1%, or sodium hypochlorite at concentration of at least about 15 0.5%, or CPC or CPB at concentration of at least about 0.5%.

36. A composition which, once reconstituted in an aqueous solution, achieves a final concentration of at least 0.5% CPC or CPB, 1% EDTA, 1% an acid or a salt of an acid selected from mandelic, glycolic, fumaric, citric and phosphoric acids or a mixture thereof, and a buffering agent to achieve 20 a pH of about 7.5 or higher.

37. A method for removing a biofilm from a surface, which comprises the step of contacting said surface with a composition as defined in any one of claims 1 to 36, or with a composition achieving a final concentration of SDS 25 0.25%, sodium benzoate 2% and sodium salicylate 0.2%, or with a composition achieving a final concentration of 0.1 - 0.3% SDS or SDDD, 0.1 - 0.3% SCS or SLS, 0.1% zinc sulfate, acetate, nitrate or gluconate salts and 0.1 - 0.3% HEEDTA, EDTA or DTPA for a time sufficient to dislodge said biofilm.

38. A method as defined in claim 37, wherein said time is at least about 30 one hour.

39. A method as defined in claim 37, wherein said time is comprised between about 1 and about 18 hours.

40. A method as defined in claim 37, wherein no mechanical aid is required to remove the biofilm.

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